DATA ITEM DESCRIPTION	2. IDENTIFICATION NO(S)	
	AGENCY	NUMBER

1. TITLE

Configuration Item Development Specification

| USAF | DI-E-3102A |

3. DESCRIPTION/PURPOSE

The functional configuration identification and allocated configuration identification documentation (specifications) establish the performance, design, development, and test requirements for all configuration items (CIs) to be developed under the terms of *the* contract.

4. APPROVAL DATE

17 April 1972

5. OFFICE OF PRIMARY RESPONSIBILITY

AFSC

6. DOC REQUIRED

7. APPROVAL LIMITATION

APPLICATION/INTERRELATIONSHIP

The development specification(s) after acceptance by the procuring activity establishes the performance requirements which the configuration item(s) must satisfy upon completion of the development phase. A development specification is required for each configuration item allocated from the system specification which established the functional baseline or from a higher level configuration item or for a non-system CI. The development specification will normally be prepared as Part I of a two part specification unless otherwise specified in the contract except for facility or ship development specifications (MIL-STD-490, Appendix V). For Computer Program Configuration Items (CPCIs) use DI-E-3119. If other than Form la specifications (MIL-STD-490) are required, the specific form from

REFERENCES (Mandatory as cited In block 10)

MIL-STD-490
MIL-S-83490
MIL-STD-483

MCSL NUMBER(S)

9. PREPARATION INSTRUCTIONS

1. The contractor shall prepare a development specification for each configuration Item in accordance with the requirements of MIL-STD-490, Appendices II, III, IV, and V, as applicable and as stated in the contract or work statement, When other than Form la specifications are called out in Block 16 of the Contract Data Requirements List (CDRL), Appendixes of MIL-STD-490 will be used as. a guide In the preparation of specifications. The specification cover page shall be in accordance with MIL-STD-489, Figure 1.

2. When the prime item is for training equipment, the prime item development specification instructions in Appendix II, MIL-STD-490 shall be implemented by the following instructions:

APPENDIX II

20. TYPE Bl, PRIME ITEM DEVELOPMENT SPECIFICATION

20.1   Section 1, "Scope." No change

Example

1.   SCOPE

1.1   This section shall also briefly describe the intended use of the trainer by whom and where it is intended to be used; e.g., contractor's plant, ATC Base, etc.

ML-S-83490 will be called out in Block 16 of the CDRL.   For prime items that are training equipments, the additional requirements contained below in Block 10, Preparation Instructions, shall be included in the specification.

Preparation Instructions (Continued)

20.2   Section 2, "Applicable Documents." Add "This section shall include a list of documents **of** operational equipment that will be used to define trainer design/layout. A list of the documents used as source data shall be included, e.g., QQPRI, and Personnel/Equipment Data (PED) which are applicable to paragraphs within the body of this part of the specification."

20.3   Section 3, "Requirements. "   No change.

20.3.1   Paragraph 3.1, "Item definition."   No change.

20.3.1.1 Paragraph 3.1.1, "Item diagrams." No change.

20.3.1.2 Paragraph 3.1.2, "Interface definition." This paragraph shall describe the trainer-facility interface requirements.   This is in addition to applicable requirements of paragraph 3.2.2.

20.3.1.3 Paragraph 3.1.3, "Major component list." Add "This paragraph shall list the major items of equipment required to operate with a trainer in an instructional situation by the following categories:

"Contractor-furnished system operational equipment."

"Government-furnished equipment (by expected source).'

20.3.1.4 Paragraph 3.1.4, "Government-furnished property list" No change.

20.3.1.5 Paragraph 3.1.5, "Government loaned property list."   No change.

20.3.2   Paragraph 3.2, "Characteristics."

20.3.2.1 Paragraph 3.2.1, "Performance." Add "This paragraph shall include:

"a. A summary of the training tasks to completely qualify Air Force personnel to **operate** and maintain the system equipment represented by the trainer, including identification and location(s) of operational equipment upon which these tasks will be performed in the operational situation. This summary should reflect both organizational and field levels of operation and maintenance.

"b. A list of the training tasks identified in the preceding paragraph which the trainer will support, accompanied by a statement of the method by which the trainer will support the tasks listed (i.e., method by which malfunction can be inserted into the trainer system to practice isolation of malfunctions and/or emergency operating procedures).

"c. A statement of limitations inherent in the trainer design which may preclude adequate support of the total operations procedures and/or field maintenance procedures (e.g., bench repair of malfunctioned electronic chassis).

"d. Other Trainers - reference to other trainers/training equipment or operational equipment to be used jointly with or to supplement the trainer to cover the training tasks and limitations described in paragraphs 3.1.1.1.a and b, above.

"e. Simultaneous Training - identification of the tasks covered by this trainer requiring simultaneous student participation at different work stations. Training tasks numbers from paragraph 3.1.1.1.b, above, should be used.

"f. Class Size - The maximum number of students that may be efficiently trained simultaneously with this trainer in (1) demonstration with observers and (2) student participation.

"g. Fault Insertion - The types of faults *to* be inserted, the methods of generating such faults, where they will be inserted in the system, source of information identifying the faults to be inserted, and a description of the provisions in trainer design for including additional faults not identifiable during trainer design.

"h. Special Features - A description of the special features of the *trainer* which make it more flexible as *a training* device than the operational hardware which it reflects; i.e., the capability of controlling functions that are automatically sequenced in the operational equipment; simulation of system equipment to provide a capability of continuously *operating/* recycling in a training situation.

"In addition, a list shall be included of training tasks supported by the trainer which may differ from the operational and maintenance tasks required to support the equivalent system equipment."

20.3.2.2 Paragraph 3.2.2, "Physical Characteristics." No change.

20.3.2.3   Paragraph 3.2.3, "Reliability." This paragraph shall reflect a requirement **for** a specified period of continuous operation and **use in terms** of "turned on" time in hours and number of training cycles. This requirement must be derived jointly (SPO/contractor/ATC/using command) as a function **of the scheduled course and class load, in-house maintenance capability of the user, and** anticipated useful lift of the trainer. This requirement shall be stated as MTBF with reasonable tolerance and at a specified confidence level.

20.3.2.4   Paragraph 3.2.4, "Maintainability." No change.

20.3.2.5   Paragraph 3.2.5, "Environmental conditions." No **change.**

20.3.2.6   Paragraph 3.2.6, "Transportability. " Add "State whether this trainer is to **be** permanently installed at a specific location, road mobile, **railroad mobile, or airmobile.**"

20.3.3   Paragraph 3.3, "Design and construction. "   No change.

20.3.3.1   Paragraph 3.3.1, "Materials, **processes,** and parts." No change.

20.3.3.1.1 Paragraph 3.3.1.1, "Related Functional Simulation." This   . paragraph shall describe how simulation **of operational equipments or** functions not physically represented in **the trainer will be accomplished.** The degree of simulation or visual presentations, control positions, and physical con- figuration of the operational equipment being reflected in trainer shall be specified.

20.3.3.1.2 Paragraph 3.3.1.2, "Modification." This **paragraph shall describe** the design features of **the** trainer **which** will **allow for** modification of trainer systems or subsystems to later system model **series.** Careful consideration shall be given to possible future changes in the operational equipment, and sufficient design flexibility shall be incorporated **in** the trainer to **permit** rapid **and inexpensive** modifications when such changes occur. Possible future attachments to the trainer shall **be** considered. which will increase its training value in terms of an expanded operational mission. **When** applicable., the design shall provide for rapid and inexpensive connection of the device to related equipment so as to accomplish **more** advanced training, **or to** provide integrated crew training as well as individual training.

20.3.3.2   Paragraph 3.3.2, "Electromagnetic radiation." **Add** "Particular attention shall **be** accorded the problems which may arise from **the use of** transmitting frequencies for the training situation dlfftrtnt from those used In the operational situation. Additionally, the specific requirements regarding physical location of the trainer on **a** base shall be stated so **as** to preclude unnecessary interference with normal communications **of the** local populace.

20.3.3.3 Paragraph 3.3.3, "Nameplates and product marking." No change.

20.3.3.4 Paragraph 3.3.4, "Workmanship." No change.

20.3.3.5 Paragraph 3.3.5, "Interchangeability." No change.

20.3.3.6 Paragraph 3.3.6, "Safety." No change.

20.3.3.7 Paragraph 3.3.7, "Human performance/human engineering." No change.

20.3.4 Paragraph 3.4, "Documentation." No change.

20.3.5 Paragraph 3.5, "Logistics."

20.3.5.1 Paragraph 3.5.1, "Maintenance." No change.

20.3.5.2 Paragraph 3.5.2, "Supply." No change.

20.3.5.3 Paragraph 3.5.3, "Facilities and facility equipment." No change.

20.3.6 Paragraph 3.6, "Personnel and training. " Not required.

20.3.6.1 Paragraph 3.6.1, "personnel. " Not required.

20.3.6.2 Paragraph 3.6.2, "Training. " Not required.

20.3.7 Paragraph 3.7, "Major component characteristics." No change.

20.3.8 Paragraph 3.8, "Precedence." No change.

20.4 Section 4, "Quality Assurance provisions. "

a. Add "Reliability testing on system equipment used as training equipment is not normally required. However, an analysis based on existing reliability data for system parts and other components is necessary. This analysis shall be sufficient to substantiate the requirements of paragraph 3.2.2.

b. No change.

C. No change.

d. No change.

e. No change.

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20.4.1   Paragraph 4.1, "General, " No change.

20.4.1.1   Paragraph 4.1.1, "Responsibility for tests." No change.

20.4.1.2   Paragraph 4.1.2, "Special tests and examinations."   No **change.**

20.4.2   Paragraph 4.2, "Quality conformance inspections." Add "An acceptance inspection covering the functional characteristics and suitability shall be outlined defining the tests to be used in determining **the adequacy** of the trainer to accomplish the general and specific objectives of Section 3.   This outline shall be stated in 'requirement for test' language and shall describe the criteria methods, materials, and personnel that will be applied or required in the acceptance inspection.   Further, procedural checklists developed for use with the trainer shall be compatible with and representative of the checklist and procedures developed for the system which this trainer represents,   The objectives of this acceptance inspection are to determine:

"a.   The functional adequacy and performance capability of the equipment in relation to its planned use in the training mission.

"b.   Design adequacy in terms of layout, recording devices, tolerances, limits of operation, proficiency measures, and related characteristics.

"c.   The adequacy of installation, calibration, and maintenance procedures, including training equipment parts consumption.

"d.   The suitability of the equipment as reflected in the responses of representative students, instructors, and operators."

20.5   Section, "Preparation for delivery."   No **change.**

20.6   Section, "NOTES."   No change.

20.7   Sect ion 10, "Appendix I. "   No change.